



**GHANA**  
**ELECTROMETER**®

# eCash-III 1 phs SMART DIRECT SINGLE PHASE METER

## EM101-4

Residential Applications (Low Voltage)



### INTRODUCTION

The EM101-4 is a single phase two wire Smart Prepaid electricity meter. A modern, electronic, fully programmable device, designed for application in payment systems for monitoring and control of electricity consumption, and have been designed to serve billing purposes.

The EM101-4 has an advanced optical system that allows data retrieval and meter configuration whenever required by the utility using modern technology and up-to-date manufacturing techniques resulting in low power losses, high reliability, and more flexibility.

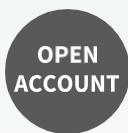
The meter is charged manually using RFID cards, digitally calibrated and provides a pulsed output for both active and reactive energy consumption.

This Meter is used to measure energy consumption in 230 Vac, 50 Hz, and 5-60 Ampere. It contains an independent measuring element allowing consumed energy to be measured. There are FOUR (4) Light Emitting Diodes [LED] on the front panel of the meter BUT ONLY TWO (2) active serving as indicators / alarms that alerts on activity inside the unit.

The RFID & GPRS modules in the unit allows for 2-way communication with a RFID card & OTA respectively.

### STANDARDS

- IEC 62052-11
- EN 50470-01
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Optical



RFID



Tampers



Active Energy



Cut-Off Relay



GSM/GPRS



Battery

## METER SPECIFICATIONS

### Electrical Characteristics

Accuracy Class	Class 1
Nominal Voltage	230V
Supply Variation	±30% Vn
Spike Voltage Tolerance	6 kV
Starting Current	0.4% In
Nominal Current	5A
Maximum Current	60A, 80A
Nominal Frequency	50Hz
Frequency Variation	±5 %
Inherent Consumption of Voltage Circuit	≤1W ; ≤8VA
Inherent Consumption of Current Circuit	≥2VA
Backup Power Supply	Super Capacitor

### Memory

Type	Non volatile memory
Data Retention Period	10 Years

### Environmental Conditions

IP Rating	IP54
Temperature Range	-20°C to +70°C
Storage Temperature	-30°C to +75°C
Humidity Range	95%
Altitude	0-3600 meters

### Communication

Optical Port	Standard Optical Port - IEC 62056-21
Optical Port Data Transmission Rate	2400 bit/s

## METER FEATURES

### Feature

### Description

Measurements	<ul style="list-style-type: none"> <li>The EM101-4 is capable of measuring the active energy consumed in both forward and reverse directions</li> <li>The meter can calculate the maximum demand power in kW</li> </ul>
Optical Operation	<ul style="list-style-type: none"> <li>Used to retrieve various data from the meter including but not limited to consumption and tamper attempts</li> <li>Used to configure and/or update the meter's functionality</li> </ul>
Communication Modules	<ul style="list-style-type: none"> <li>Optical Port Module: used to allow a PC to communicate with the EM101-4</li> </ul>
Tamper Proofing	<ul style="list-style-type: none"> <li>The EM101-4 is tamper proof against:                             <ul style="list-style-type: none"> <li>✓ Meter earthing</li> <li>✓ Meter and Terminal cover open</li> <li>✓ Current reversal</li> <li>✓ Overvoltage</li> <li>✓ Undervoltage</li> <li>✓ Overload</li> </ul> </li> </ul>
Data Display	<ul style="list-style-type: none"> <li>The EM101-4 allows users to set the information to be displayed on the 7 digit seven segment LCD screen</li> <li>The following Parameters are displayed on the LCD:                             <ul style="list-style-type: none"> <li>✓ Total Consumption</li> <li>✓ Reverse Consumption</li> <li>✓ Fault Consumption</li> <li>✓ Maximum Demand</li> <li>✓ Voltage</li> <li>✓ Current</li> <li>✓ Power Factor</li> <li>✓ Meter ID</li> <li>✓ Number Of Resets</li> </ul> </li> </ul>

## MECHANICAL SPECIFICATIONS

- **Dimensions:** (L x W x D) = 155.4 mm x 134.6 mm x 57.2 mm
- **Weight:** 0.5Kg
- **Meter Housing:** Flame Retardant Polycarbonate

